CONTENTS

No. 1.—MARCH.

PAGE

ARMITAGE, P., AND DOLL, R.—The Age Distribution of Cancer and a Multi-stage Theory of Carcinogenesis 1

KREYBERG, H. J. A.—A Study of Tobacco Smoking in Norway 13

KORTEWEG, R.—Mortality from Lung Cancer in the Netherlands during and after the Last War 34

BLACKLOCK, J. W. S., KENNAWAY, E. L., LEWIS, G. M., AND URQUHART, M. E.—The Carbon Content of Human Lungs and Bronchial Glands 40

DAVIES, R. I., AND WYNNE GRIFFITH, G.—Cancer and Soils in the County of Anglesey 56

PHILPS, F. R.—The Identification of Carcinoma Cells in the Sputum . . 67

SMITH, W. T., AND WHITFIELD, A. G. W.—Intra-vascular Micro-embolic Carcinomatosis as a Cause of Purpura. Report of a Case associated with Focal Histological Lesions in the Nervous System 97

MITRA, S., AND DE, P. K.—Differentiation and Radiation Effects on Cancer Cells. 107

LUDFORD, R. J.—Nuclear Structure and its Modifications in Tumours . . 112

BATHER, R.—Some Observations on an Ascitic Rous No. 1 Sarcoma . . 132

HARRIS, R. J. C., MALMGREN H., AND SYLVÉN, B.—The Polysaccharides of Rous Sarcoma No. 1 141

PEACOCK, P. R., AND PEACOCK, ANDREE—Epithelial Tumours in Fowls Induced by 2-Acetylaminofluorene 147

BIELSCHOWSKY, F.—Functional Acidophilic Tumours of the Pituitary of the Rat 154

PULLINGER, B. D.—Limited Power of Growth of Spontaneous Benign Mammary Tumours in RIIIb Mice 161

MILLER, E. W., AND PYBUS, F. C.—The Local Effect of Methylcholanthrene on two Inbred Strains of Mice and their Reciprocal Hybrids 163

CALCUTT, G., AND YETTS, R. A.—A Tumour Showing Mitotic Division within an Apparent Nuclear Membrane 173

CALCUTT, G.—The Photosensitising Action of Chemical Carcinogens . . . 177

SURVEY OF PAPERS i

No. 2.—JUNE.

PAGE

CURWEN, M. P., KENNAWAY, E. L., AND KENNAWAY, N. M.—The Incidence of Cancer of the Lung and Larynx in Urban and Rural Districts . . . 181

KREYBERG, L.—The Significance of Histological Typing in the Study of the Epidemiology of Primary Epithelial Lung Tumours: A Study of 466 Cases 199

KREYBERG, L.—The Occurrence of Lung Cancer in Norway 209

STEINER, P. E.—The Endemiology of Cancer by Organ Systems 215

WARWICK, O. H., AND PHILLIPS, A. J.—Cancer Among Canadian Indians . 223

BOYD, J. T., AND DOLL, R.—Gastro-Intestinal Cancer and the Use of Liquid Paraffin 231

KEYSER, J. W.—Effect of Nitrogen Mustard or X- or Radium-Irradiation Treatment on the Level of Blood Serum Protein-bound Carbohydrate (Polysaccharide) in Patients with Neoplastic Diseases 238

MARSHALL, J., AND PEPLER, W. J.—Mollusca Pseudocarcinomatosa. Discussion of a Case of the Ferguson Smith Type of Unilateral Distribution . . 251

BLACKBURN, E. K.—The Effect of Stilboestrol in Acute Leukaemia 255

AMBROSE, E. J.—A Physical Approach to the Problem of Cancer 259

HIEGER, I., AND ORR, S. F. D.—On the Carcinogenic Activity of Purified Cholesterol 274

GHADIALLY, F. N., AND GREEN, H. N.—The Effect of Cortisone on Chemical Carcinogenesis in the Mouse Skin 291

COMMINS, B. T., COOPER, R. L., AND LINDSEY, A. J.—Polycyclic Hydrocarbons in Cigarette Smoke 296

COHEN, A., AND COHEN, L.—Radiobiology of the C3H Mouse Mammary Carcinoma: Effect of Immunogenetic Factors on the Radiosensitivity of the Tumour Treated *In Situ* 303

COHEN, A., AND COHEN, L.—Radiobiology of the C3H Mouse Mammary Carcinoma: Increased Radiosensitivity *In Situ* of Homoplasts attenuated Prior to Implantation 313

GOLDFEDER, ANNA.—Studies on Radiosensitivity and "Immunizing" Ability of Mammary Tumours of Mice 320

JACKSON, H.—The Development of Resistance in the Walker Carcinosarcoma to the Action of Triethylene Melamine 336

WOODHOUSE, D. L.—Experiments on the Interaction of Polycyclic Hydrocarbons with Epidermal Constituents 346

HAREL, J., AND OBERLING, CH.—New Data on the Ultrachondrioma 353

NEISH, W. J. P.—Some Reactions of Sera from Normal and Tumour-bearing Albino Rats with 2, 3, 5-Triphenyltetrazolium Chloride 361

LAJTHA, L. G., OLIVER, R., AND ELLIS, F.—Incorporation of ^{32}P and Adenine ^{14}C into DNA by Human Bone Marrow Cells *In Vitro* 367

MOODIE, M. M., AND REID, C.—Correlation of Spectral Shifts and Carcinogenic Power 380

PEARSON, BJARNE, AND RICHARDSON, FLAVIA.—Alkaline Phosphatase Activity in Four Transplantable Mammary Carcinomas of Mice 384

SURVEY OF PAPERS i

No. 3.—SEPTEMBER.

PAGE

SPENCER, J. G. C.—The Influence of the Thyroid in Malignant Disease . . 393

STERN, RUBY O.—The Morbid Anatomy of Carcinoma of the Bronchus: An Analysis of 87 Cases, with Special Reference to Solitary Cerebral Metastases 412

PHILPS, F. R.—Adenocarcinoma Cells in the Sputum 420

PHILPS, F. R.—Appearances which may Cause Confusion in the Diagnosis of Bronchial Carcinoma from Sputum Examination 422

LEVEAUX, V. M.—The Diagnosis of Carcinoma of the Pancreas 427

LUMB, G.—Transplantation of Human Tumours into Mouse-brain 434

PULLINGER, B. D.—Carcinoma and Atrophy induced by Local Surface X-Irradiation in the Mammary Gland in RIIIb Mice 445

HORNING, E. S., and WHITTICK, J. W.—The Histogenesis of Stilboestrol-Induced Renal Tumours in the Male Golden Hamster 451

SCHOENTAL, R., HEAD, M. A., and PEACOCK, P. R.—Senecio Alkaloids: Primary Liver Tumours in Rats as a Result of Treatment with (1) A Mixture of Alkaloids from *S. Jacobaea* Lin.; (2) Retrorsine; (3) Isatidine . . 458

MILLER, E. W., and PYBUS, F. C.—The Effect of Methylcholanthrene on the Incidence of Lung Tumours in Two Inbred Strains of Mice and their Reciprocal Hybrids 466

MILLAR, M. JEAN, and NOBLE, R. L.—The Morphology and Growth Characteristics of a Transplantable Mammary Fibroadenoma in the Rat . . 485

MILLAR, M. JEAN, and NOBLE, R. L.—Effects of Exogenous Hormones on Growth Characteristics and Morphology of Transplanted Mammary Fibroadenoma of the Rat 495

MILLAR, M. JEAN, and NOBLE, R. L.—The Growth Characteristics and Response to Hormones of Transplanted Fibrosarcoma Arising from Mammary Fibroadenoma in the Rat 508

JOLLES, B., and LAWS, J. O.—The Effect of "Synkavit" Administration Combined with Irradiation upon Rabbits and Rats 513

COHEN, A., and COHEN, L.—Radiobiology of the C3H Mouse Mammary Carcinoma: Effect of Attenuation of the Tumour Prior to Implantation in F_1 Hybrid Hosts 522

POWELL, A. K.—Effect of Dithiocarbamates on Sarcoma Cells and Fibrocytes Cultured *In Vitro* 529

BATHER, R.—Growth Characteristics of the Rous No. 1 Sarcoma Grown in the Peritoneal Cavity of Chickens 535

BATHER, R.—Influence of Tumour Growth Rate and Host Age on the Infective Virus and Cytoplasmic Particulate Yields from some Avian Tumours . 545

CALCUTT, G., and PAYNE, S.—The Intracellular Metabolism of 3 : 4 Benzypyrene: Sites of Oxidation in Mouse Liver 554

CALCUTT, G., and PAYNE, S.—The Intracellular Metabolism of 3 : 4 Benzypyrene: Further Examination of the Supernatant Fraction from Mouse Liver . 561

NEISH, W. J. P.—Behaviour of Sera from Normal and Tumour Rats in the Iodine-Azide Reaction and in Polarographic Proteose Tests 566

SURVEY OF PAPERS i

No. 4.—DECEMBER.

PAGE

IVERSEN, S.—Human Cancer and Age 575

TROMP, S. W.—Statistical Study of the Possible Relationship between Mineral Constituents in Drinking-water and Cancer Mortality in the Netherlands (Period 1900–1940) 585

WYNNE GRIFFITH, G. AND DAVIES, R. I.—Cancer and Soils in the County of Anglesey.—A Revised Method of Comparison 594

KREYBERG, L.—The Geographical Distribution of Histological Sub-groups of Primary Epithelial Lung Tumours in Norway 599

KREYBERG, L.—Occupational Influences in a Norwegian Material of 235 Cases of Primary Epithelial Lung Tumours 605

BRUZZONE, S. AND LIPSCHUTZ, A.—Endometrial Adenocarcinoma and Extragenital Tumours in Guinea-pigs with " Ovarian Fragmentation " 613

HORNING, E. S.—The Influence of Unilateral Nephrectomy on the Development of Stilboestrol-induced Renal Tumours in the Male Hamster 627

HOWELL, J. S., MARCHANT, JUNE AND ORR, J. W.—The Induction of Ovarian Tumours in Mice with 9 : 10-Dimethyl-1 : 2-Benzanthracene 635

BOYLAND, E., HARRIS, J. AND HORNING, E. S.—The Induction of Carcinoma of the Bladder in Rats with Acetamidofluorene 647

MILLER, E. W. AND PYBUS, F. C.—The Effect of Methylcholanthrene on the Incidence of Mammary Carcinoma in Two Inbred Strains of Mice and their Reciprocal Hybrids 655

ROE, F. J. C. AND SALAMAN, M. H.—A Quantitative Study of the Power and Persistence of the Tumour-initiating Effect of Ethyl Carbamate (Urethane) on Mouse Skin 666

BOYLAND, E. AND KOLLER, P. C.—Effects of Urethane on Mitosis in the Walker Rat Carcinoma 677

BELLAIRS, RUTH.—The Effects of Tetra-sodium 2-Methyl 1 : 4-Naphthohydroquinone Diphosphate on Early Chick and Amphibian Embryos . . . 685

SCOTT, G. M.—Vitamin B Complex as a Deterrent to Skin Irritation 693

ARGUS, MARY F. AND HEWSON, KATHLEEN.—Tumour Localization Studies with Sulfur 35-Labeled Disulfonamido Derivatives of Fluorene 698

JULL, J. W.—The Effect of Hormonal Environment on the Latent Period of a Grafted Interstitial Cell Carcinoma of the Testis 704

CALCUTT, G. AND PAYNE, S.—The Intracellular Metabolism of 3 : 4 Benzpyrene : Benzpyrene Metabolites from Rats and their Sites of Formation in Rat Liver 710

HARRIS, R. J. C.—The Association of Acid and Alkaline Phosphomonoesterase with Cytoplasmic Particles from Chick Embryo and from Fowl Sarcomas . 714

HARRIS, R. J. C.—The Phosphomonoesterase Activity Associated with Preparations of Rous Sarcoma No. 1 Agent 722

HARRIS, R. J. C.—Multiplication of Rous No. 1 Sarcoma Agent in the Chorioallantoic Membrane of the Embryonated Egg 731

CAMPBELL, J. G.—Observations on the " Eclipse Phase " in a Virus-associated Erythroleukaemia of the Chicken 737

INDEX TO AUTHORS 743

SURVEY OF PAPERS i